BAT-DRAKE PROJECT: HIGH-RESOLUTION BATHYMETRY DATA IN THE DRAKE PASSAGE (ANTARCTICA)

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The opening of the southern gateways, mainly Drake Passage and the Tasman Strait, permitted the modern pattern of ocean circulation. In particular, it led to the development of the Antarctic Circumpolar Current (ACC), which caused the thermal isolation of Antarctica, and was partially responsible for global cooling at the Eocene-Oligocene boundary. Therefore the gateway openings constitute first order tectonic events involving complex geological process such as continental fragmentation, the development of oceanic basins and the rifting of continental blocks. Detailed cartography of the sea floor in Drake Passage will identify the main physiographic features. Sea-floor topography in the region is an important boundary condition for high-resolution ocean circulation models and also provides Drake Passage opening. Sea-floor digital elevation models are also very important to other sciences such as physical oceanography or marine biology. This project will constitute an international cooperative effort between the Spanish Geological Survey (IGME), other Spanish research institutions and the British Antarctic Survey (BAS) for the compilation of precise bathymetric data obtained on previous and future cruises in the Drake Passage region (located between parallels 54ºS and 62.5ºS and meridians 70 ºW and 52 ºW) and the development of sea-floor cartography and digital elevation models. This initiative will be part of IBCSO (International Bathymetric Chart of Southern Ocean), under the SCAR umbrella, which recognises the importance of regional data compilations in areas of particular scientific interest in the Antarctic, such as the Ross Sea, Drake Passage and the southern margin of Weddell Sea.